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10/699,109

10/31/2003

Edward C. Gunzel

FA/261

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EXAMINER

COLE, ELIZABETH M

ART UNIT

PAPER NUMBER

1782

MAIL DATE

DELIVERY MODE

07/20/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/699,109 | <b>Applicant(s)</b><br>GUNZEL ET AL. |  |
|                              | <b>Examiner</b><br>Elizabeth M. Cole | <b>Art Unit</b><br>1782              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 30-86 is/are pending in the application.
- 4a) Of the above claim(s) 39-81 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17, 20-38 and 82-86 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/3/09</u> .   | 6) <input type="checkbox"/> Other: _____                          |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, 16-17, 20-32, 82-86 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2001/0006173 to Rock et al taken with Graber, U.S. Patent No. 6,243,870 and in view of Caird et al, U.S. Patent NO. 3,768,156. Rock discloses a fabric having a conductive cable attached to it. The fabric can be a knitted, woven or nonwoven material and can comprise multiple layers. The fabric can be hydrophobic or hydrophilic. See paragraph 0020. The conductive cable can be covered by a barrier layer which corresponds to the claimed tape. The barrier layer can comprise multiple layers. The layers can comprise polyurethane and PTFE among other materials. The barrier layer can be adhesively bonded to the fabric layer and overlies the conductive cable. See figure 12 as well as paragraph 0031. With regard to the claims as amended, a further PTFE barrier layer can be provided on the opposite side of the fabric layer<sup>12</sup>. See figure 13 and paragraph 0030. With regard to the limitations set forth in claims 22-26, no structure is set forth for the claimed articles. Therefore, these statements have been considered to be statements of intended use. Rock et al differs from the claimed invention because although Rock et al does disclose employing multiple fabric layers it does not explicitly state that the cable extends across two of the layers. Caird et al teaches that conductive cables such as electrodes can be incorporated into garments such as jacket so that the cable extends across two fabric

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panels. See figure 3 as well as col. 3, line 53 – col. 4, line 41. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the jacket of Rock so that the cable extended across two fabric panels, motivated by the teaching of Caird that this was a known method of forming a garment such as a jacket which comprised conductive elements and because the more panels that are used in jackets the better the fit of the jacket. With regard to the limitations regarding the conductivity of the cable, since the cables in Rock are used as heating elements, it would have been obvious to have selected the appropriate conductivity and resistance in the cables in order to produce a material having the desired properties. With regard to the limitations regarding durability after washing, since Rock appears to disclose the same structure, presumably the material of Rock would meet these limitations.

3. With regard to the limitation that the tape has a narrow width justly slightly greater than the cable width, Rock teaches that the barrier layer can have two functions in the fabric body. First, the barrier layer can be provided in order to impart properties such as preventing air and water droplets to pass through the fabric in order to provide a windproof, water resistant and vapor permeable fabric. See paragraphs 0031. Second, the barrier layer can be provided to protect the circuit against the effects of abrasion. See paragraph 0033. Rock differs from the claimed invention because it does not teach or show that the barrier layer can be narrow and only slightly wider than the cable. However, since Rock teaches providing the barrier for two reasons, to form a windproof, water resistant fabric/garment and to protect the cable, it would have been

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obvious to have formed the barrier so that it only was slightly wider than the cable, in situations where the properties of being windproof and water resistant were not desired in the entire garment, for example, in garments intended for use in hot weather, etc. Further, Caird et al teaches that it is known to provide tapes, (element 4) to protect cables in electrically conductive fabrics, which are only slightly wider than the cable. Therefore, the person of ordinary skill in the art at the time the invention was made would have been able to select the particular size of the barrier layer of Rock, in view of the teachings both of Rock and Caird, including a size which was only slightly wider than the cable, in order to produce a less expensive and lighter weight fabric, while still protecting the electrical cable and circuit.

4. With regard to the limitation that the fabric comprises more than one electronic module and connectors attached to the cable ends, Rock shows connector ends 46 and 47 which can be attached to electronic modules. See paragraph 0027. Therefore, it appears that Rock could be connected to more than electronic module. Further, Graber teaches incorporate electronic connectors into garments which can be connected to more than one electronic module, such as one for power and one for information, (see col. 3, lines 50-66). Therefore, it would have been obvious to one of ordinary skill in the art to have employed more than one electronic module as taught by Graber, depending on the desired end use of the finished product.

5. With regard to the limitations regarding durability, since Rock appears to provide the same structure of a barrier layer and adhesive overlying a cable, it is reasonable to expect that Rock would have the claimed durability or else, in the alternative, it would

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have been obvious to have optimized the adhesion of the barrier to the fabric so as to provide maximum protection to the electronic cables and thus protect the conductivity of the cable. . Also, see the discussion of the Gunzel declaration in the previous action, (repeated below for convenience), and the response to arguments below. With regard to the limitation that the barrier layer is a composite layer with a knitted layer and a barrier layer, it is noted that Rock teaches at paragraph 0031 that it is desirable for the barrier layer to be vapor permeable but non porous and that it is also preferred that the barrier layer be soft and stretchable. Rock teaches that knitted layers are soft and stretchable in paragraph 0031. Therefore, it would have been obvious to have employed a composite barrier layer which comprised an impermeable layer and a knitted layer, in order to provide a barrier which was both soft and which provided a non porous barrier.

6. Claims 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rock et al taken with Graber, U.S. Patent No. 6,243,870 and in view of Caird et al, U.S. Patent NO. 3,768,156 as applied to claims above, and further in view of Cordia et al, U.S. Patent No. 5,236,765. Rock discloses a hearable fabric as set forth above. Rock differs from the claimed invention because Rock et al does not disclose the particular types of adhesives which can be used to bond the barrier layer which overlies the cable to the fabric layer. Cordia teaches at col. 9, lines 4-16, that pressure sensitive, hot melt or curable adhesives can be used to bond heating elements to fabric layers. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to have employed the particular adhesives set forth by Cordia to bond the barrier tape of

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Rock to the fabric layer, since Cordia teaches that such adhesives are suitable for use to bond heating elements to fabric layers.

7. Claims 33-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rock et al taken with Graber, U.S. Patent No. 6,243,870 and in view of Caird et al as applied to claims above, and further in view of Parker, U.S. Patent No. 5,658,164. Rock discloses a hearable fabric as set forth above. Rock differs from the claimed invention because Rock does not disclose employing a micro ribbon as the conductive cable. Parker teaches that micro-ribbon cables which comprise an insulation layer can be used to form electrical connections. Therefore, it would have been obvious to one of ordinary skill in the art at the time to have employed a micro-ribbon as the cable in Rock. One of ordinary skill in the art would have been motivated to employ a micro ribbon cable because Parker teaches that such cables are rugged and durable. See col. 4, lines 40-45.

8. The Declaration under 37 CFR 1.132 filed 1/8/09 is insufficient to overcome the rejection of claims based upon Rock in view of Caird and further in view of Parker as set forth in the last Office action because: the evidence set forth in the declaration is not commensurate in scope with the claims. The claims are not limited to the particular materials used in the declaration. The claims do not recite particular laminate strength. The claims do not quantify what is meant by a slightly wider tape covering versus a wider tape covering. The evidence set forth is for a much for limited embodiment than what is claimed. Also, it is noted that Rock discloses employing an adhesive and/or lamination to bond the barrier layer to the fabric, therefore when the Declaration

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discusses forming the sample fabrics by either taping or laminating, it is not clear what the difference is between the two processes and whether the laminating disclosed by Rock is the same as that employed in the test set forth in the Declaration and how the adhesive bonding discussed by Rock is accounted for in the declaration and how adhesively bonding a barrier layer on to the fabric would be different than taping, i.e., what is the difference between employing a preformed tape, (presumably having a structure of adhesive plus backing) and adhesively bonding the barrier layer which would produce the same structure of adhesive plus backing in the finished product. .

9. Applicant's arguments filed 5/3/10 have been fully considered but they are not persuasive.

10. Applicant argues that one of ordinary skill in the art would recognize the difference between a seam sealing tape and the laminated structure of Rock. Initially, it is noted that the tape does not extend along the length of a seam, but rather crosses a seam at one area of the seam. As shown in Caird, it was known in the art to extend electronic cable across different panels of fabric which are joined by seams and to cover such cables with a protective tape having a width which is only somewhat wider than the width of the cable.

11. Applicant argues that one of ordinary skill would not have been motivated to convert Rock from a barrier layer as used in a standard textile laminate process to a smaller barrier making it more similar to the size of Applicants claimed seam sealing tape. However, Rock already teaches using the barrier layer to protect the cables. Rock also teaches securing the barrier over the cables by means of either an adhesive



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or by lamination. Further as, set forth above, Caird teaches employing barrier layers that are not much wider than the electronic cables they protect in electronic fabrics.

Also, if the width of the tape is a critical feature of the claimed structure, it is not set forth with specificity in the claims and the showing does not establish a critical range of sizes which is commensurate in scope with the claims.

12. Applicant argues that the showing is the best attempt to reproduce what one skilled in the art may view s the closest embodiment of Rock to the current claims and that any difficulties in distinguishing the claimed invention from Rock is that Rock fails to fully enable the lamination disclosure therein or is due to interpreting the lamination embodiment of Rock in a manner that goes beyond the intended disclosure of Rock. However, as noted previously, the instant specification teaches that thermally activated adhesives can be used, (see paragraph 0024 of the published application). A tape or barrier layer, i.e., a PTFE layer for example, which is coated with a hot melt adhesive and then bonded via heat and pressure to a fabric layer could be considered an example of adhesive bonding and lamination. It is not clear that these two terms are mutually exclusive. It appears that lamination is a type of adhesive bonding, i.e., bonding with heat and pressure. Bonding with a thermally activated adhesive would encompass lamination in that bonding would take place with heat and pressure. For example, paragraph 0039 of the published application discloses that the method of bonding in the instant invention includes heating and pressing, which is a lamination process. The fact that Applicant does not refer to the process as a lamination process does not mean that it is not a lamination process. Ultimately, regardless of how the

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layers are combined, the final product of fabric, cable, adhesive and barrier covering appear to be the same. Further, Rock is not limited to lamination processes. Rock discloses lamination or adhesive bonding. Lamination is a particular type of adhesive bonding wherein bonding is effect by means of heat and pressure. Applicant employs such a method in forming the laminate. Further, Rock teaches that the barrier layer can be applied via adhesive and/or a lamination process. (see paragraph 0032). It is not clear what the difference in a final product would be between an adhesive bonding process wherein an adhesive is used to bond a barrier layer to a textile and a process wherein a tape which comprises a barrier layer coated with an adhesive is bonded to a textile. The final product would be the same. If the width is a critical element, the particular width which produce the unexpected result need to be set forth. If the process is critical, then the process needs to be set forth. The Declaration states that the structures which are considered to correspond to the Rock structures are formed by lamination while the instant structure is formed by adhesive bonding. However, Rock says that the structures can be formed by either and adhesive bonding or a lamination process. Further, it is not clear what the difference is. A tape or barrier layer, i.e., a PTFE layer for example, which is coated with a hot melt adhesive and then bonded via heat and pressure to a fabric layer could be considered an example of adhesive bonding and lamination. It is not clear that these two terms are mutually exclusive. It appears that lamination is a type of adhesive bonding, i.e., bonding with heat and pressure. Bonding with a thermally activated adhesive would encompass lamination in that bonding would take place with heat and pressure. Therefore, the distinction which

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Applicant is attempting to bring forward in the Declaration and arguments is not clear.

Further, while Applicant argues that one of ordinary skill in the art would not equate a tape as claimed with the barrier layer and adhesive of Rock, structurally, there does not seem to be any difference between the two.

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (571) 272-1475. The examiner may be reached between 6:30 AM and 6:00 PM Monday through Wednesday, and 6:30 AM and 2 PM on Thursday.

The examiner's supervisor Rena Dye may be reached at (571) 272-3186.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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The fax number for all official faxes is (571) 273-8300.

/Elizabeth M. Cole/  
Primary Examiner, Art Unit 1782

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